

Rhodora

JOURNAL OF THE
NEW ENGLAND BOTANICAL CLUB.

Conducted and published for the Club, by

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Vol. 13.

February, 1911.

No. 146.

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Boston, Mass.
1052 Exchange Building.

||| Providence, R. I.
Preston and Rounds Co.

RHODORA.—A monthly journal of botany, devoted primarily to the flora of New England. Price \$1.00 per year (\$1.25 to all foreign countries including Canada); single copies 15 cents. Volume 1, \$2.00, Vol. 2, \$1.50. All remittances by check or draft, except on Boston or New York, must include ten cents additional for cost of collection. Notes and short scientific papers, relating directly or indirectly to the plants of the northeastern states, will be gladly received and published to the extent that the limited space of the journal permits. Forms will be closed five weeks in advance of publication. Authors (of more than one page of print) will receive 25 copies of the issue in which their contributions appear. Extracted reprints, if ordered in advance, will be furnished at cost.

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Subscriptions, advertisements, and business communications to

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Entered at Boston, Mass., Post office as Second Class Mail Matter

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FLORA OF LOWER CAPE COD; THIRD NOTE.

F. S. COLLINS.

IN my two notes on the plants of Cape Cod ¹ I gave a general account of those conditions in the town of Eastham, Massachusetts, that would be likely to affect its flora, and also gave some notes as to the relative representation of different families, and the occurrence or non-occurrence of particular species. As to the first, there is nothing now to add, but as a result of another year's observations from May to September, 1910, I have something to add to the second. What I have observed this year shows that final conclusions cannot be drawn from anything but long-continued study; that the unexpected is always happening; and that there is a vast difference between positive and negative evidence. If you have found a certain plant in a certain place, you can safely say that it occurs there; if you have looked for it for years and not found it, it is not safe to say that the plant does not grow there. An illustration of this is the case of *Monotropa*. In the years 1906 to 1909 I had been watching for our two species of the genus, but unsuccessfully, and was fairly well convinced that they were not to be found in Eastham. But on the fifth of September, 1910, I began to see them frequently in places where I had often been before. There had been a rainy day, and as soon as the sunshine came again, the *Monotropas* came pushing up through the pine needles. These colorless plants always have a resemblance to mushrooms in appearance, and I was now struck

¹ On the flora of lower Cape Cod, RHODORA, Vol. XI, p. 125; Flora of lower Cape Cod; supplementary Note, RHODORA, Vol. XII, p. 8.

by another resemblance, their sudden growth under favorable conditions. In some places there were clumps of *M. uniflora*, twenty-five stems or more, 15 cm. high, the whole growth of which could not have taken more than the two or three days since the rain began; they had not grown through the layer of pine needles, but had pushed it up; the layer of needles rested on the top of the clump, but so loosely that a moderate rain would soon bring it down. After that I saw *M. uniflora* and *M. Hypopitys* everywhere in the pine woods.

Among the plants which I mentioned in my first note as not having been found in Eastham, but which I collected this season, are *Asclepias syriaca* and *Spiraea latifolia*, but neither was common. Of the *Spiraea* there were perhaps a dozen individuals, close together, but unusually well developed, each one and a half to two meters high. They were on land recently reclaimed from the influence of the sea, and everything in that station was larger than the normal. Nothing in this year's collecting invalidates the list that I gave of genera that one would expect, but that I did not find; *Rudbeckia*, *Arctium*, *Geranium*, *Thalictrum*, *Anemone*, *Aquilegia*, *Berberis*, *Desmodium*, and *Crataegus*; to these I can add *Agrimonia*, *Aralia*, *Arisaema*, *Leon-todon*, *Mimulus*, *Nepeta*, *Osmorhiza*, *Sanicula*, *Saxifraga*, *Urtica*, *Veronica*, and *Vicia*. While it is likely that representatives of some of these genera may yet be found here, it may be fairly assumed that the conditions are not favorable to them. Nearly all the species that this year's collecting added to the list belong to the category of "specialties" as understood in my first note, species found only in limited stations; among them *Myriophyllum humile*, *Sagittaria latifolia*, *Polygonum Muhlenbergii*, *P. sagittatum*, *Apocynum androsaemifolium*, and *Helianthus divaricatus*; none of them worthy of much note elsewhere, and here only on account of their scarcity and isolation. Of marine species, only one is to be noted, *Suaeda maritima*; in previous years all my *Suaeda* was *S. linearis*, this year all *S. maritima*; probably both species are common, but I had not noticed the distinction. Of the "domestic species" I can note *Euphorbia maculata*; I had been on the watch for this species, so common in most places, but it was not until September of this year that I found it; there was only a single plant, colored bright red, but without a trace of a spot on the leaves. Of *Taraxacum erythrospermum* I found two plants only, and of *Anthemis arvensis* var. *agrestis* only one. *Eragrostis megastachya* was common near my house. It is a handsome

grass, and the Manual speaks of it as common, but it has not been common for a very long time; when the flora of Middlesex County was compiled by Mr. Dame and myself, we could find only three localities in the county, two in mill waste and one in a dump. In my first note I mentioned *Plantago aristata* var. *Nuttallii*, a variety not in the Manual; in this variety the spikes are short and few-flowered, and the whole plant is much smaller than in typical *P. aristata*. This year I found both forms in abundance growing together, and in an uninterrupted series from the largest to the smallest; the distinction seems hardly justified. *Physalis pruinosa* was not uncommon in sandy roads; the berry is a rather bright yellow. To the species of *Solidago* already mentioned I can add *S. bicolor*, but only a few scattered plants observed; *S. puberula* is more common than I supposed. *Gerardia purpurea* and *G. pedicularia* occur, in addition to *G. paupercula*, already noted; and *Ranunculus sceleratus* can be added to *R. repens*. The total absence of *Desmodium* is all the more noticeable now that I have *Lespedeza Stuevei* and *L. procumbens* to add to *L. capitata*, all well developed and not uncommon. Eight miles up the Cape, at Brewster, where there is some approach to more ordinary conditions, *Desmodium* is found to a considerable extent, but it is all one species, *D. obtusum*. When we consider the great variety of *Desmodiums* found over nearly all New England, it is evident that the special Cape Cod conditions are distinctly unfavorable to this genus.

The common *Asclepias* in Eastham is *A. amplexicaulis*, but in some respects the plants did not agree exactly with the description in the Manual, according to which the leaves are very obtuse or retuse. In no case did I find a leaf with a retuse apex, and in some cases it could hardly be called obtuse but in every instance the midrib terminated in a distinct mucro. I preserved quite a suite of specimens and submitted them to Prof. Fernald, who tells me that there is no doubt as to the determination, specimens from other localities having the same characters. The absence of mention of another character in the descriptions is easily accounted for, as it is to be seen to advantage only in the fresh plant; the midrib of the leaf is bright red, and there is a very narrow red margin, distinct enough by its bright color, but of hardly measurable width; it soon fades out in the dried plant. In this species the leaves are regularly in pairs, with a long peduncle between the highest pair and the inflorescence; but one plant had the leaves in whorls of three, with a single well-developed leaf at the base

of the umbel. Another plant had flowers of a pale cream color, instead of the usual greenish purple.

The genus *Hieracium* is a prominent feature of the flora of summer and early autumn, five species being represented, all native; there are none of the introduced species that are establishing themselves in other parts of New England. *H. marianum*, *H. scabrum*, *H. Gronovii* and *H. canadense* present no difficulties, but the fifth species, which I had called *H. venosum*, puzzled me not a little, when I compared a large number of specimens. Some of these agreed with the Manual description "leaves nearly entire, scarcely petioled, thin, *glabrous*, and often purple-veined or mottled *above*, glaucous underneath," but in other individuals the leaves bore, often abundantly, long whitish hairs. I was tempted to refer these to *H. Greenii*, but when I found on the same plant one leaf green and hairy, another of apparently the same age purple veined and smooth, I was tempted to doubt the distinctness of the two species; when Prof. Fernald showed me specimens of *H. Greenii* from the middle states, I saw that it was not my Cape Cod plant. Undoubtedly all the specimens in question belong to *H. venosum*, but the leaves of that species are more variable than had been supposed.

Like the two preceding summers, the summer of 1910 was quite dry, and many of the shallower ponds nearly or quite disappeared. In many of these ponds or pools *Nymphaea advena* abounds, and as the water became low I could examine with comfort plants that usually would be quite out of reach. In addition to the normal floating leaves on long petioles, there were everywhere submerged leaves with short petioles, practically resting on the bottom. I had never seen these before, and was struck by their abundance, forming a large, handsome rosette at the base of each cluster of petioles. The Manual says "thin submerged leaves seldom present" but here they were at least as abundant as the ordinary leaves. They are thin and finely "crimped" in radiating folds, much like the scallop shell of southern New England; the petiole is hardly half as long as the blade, and is green, while the blade is a beautiful dull purplish red. As the normal leaves were mostly old and decaying, I thought at first that these might be young leaves of the same kind, which would later come to the surface as the petioles lengthened, but I afterwards saw buds and young leaves of quite different appearance, the blade thick from the first, the petiole rapidly lengthening. Later I found the

Nymphaea growing in places where the water had quite disappeared though the mud was still wet; here could be seen the decaying petioles of the normal leaves, the blades having quite disappeared; leaves in shape quite like those of the submerged rosettes, but thicker and greener, were borne on very short petioles, standing out almost horizontally, but not resting on the mud. I suspect that the submerged leaves are formed as the water becomes unusually shallow, and are utilized as aerial leaves by the plant when, by the disappearance of the water, the ordinary floating leaves are no longer available. The time at my disposal was too short for me to watch some particular plant or group of plants, and so get certainty in the matter.

I have already noted at Brewster the occurrence of *Desmodium* as indicating an approach to more ordinary conditions; a day's collecting here showed several other species which have apparently reached their limit; *Chimaphila umbellata*, *C. maculata* and *Silene latifolia*, for instance. The most interesting station at Brewster was at the bay shore, where the ordinary upland vegetation stops as it meets the influence of salt water. Here is quite a broad zone of rank vegetation; one can wander through "forests" of *Hibiscus Moscheutos* about up to one's head; every time I see this plant in flower it is a new delight, and I cannot think of anything in our most fertile regions that surpasses a field of this in full bloom. Along with this were various overgrown grasses and sedges; *Echinochloa Walteri*, *Scirpus validus*, *S. cyperinus* and *Spartina cynosuroides*; the occurrence of this last constitutes an extension of range, as it had not before been reported north of Connecticut. I selected the smallest plant of this species I could find; to get it into press I had to cut it into four pieces, and it fully occupied four pressing sheets. This luxuriant marginal flora is found all along the inside of the Cape, but this Brewster station is at the same time fully representative and easily accessible; it is less than fifteen minutes walk from railroad station at East Brewster; after the scanty flora of the fields and roadsides, the botanist will find it a delightful surprise; if he visits it as I did in August or early September, he will hardly be able to resist the temptation to pick some of the *Hibiscus* for its beauty, but a very few plants of this, with specimens of the *Spartina* and *Scirpus*, will make quite a large armful, and he may be glad, as I was, to accept a "lift" from another collector who had been working in the neighborhood, and was driving to the R. R. station. His collection consisted of two barrels of clams, but his kindness in taking me and my collection was none the less wel-

come. At Brewster, in dry sandy ground, I found a *Cyperus* that we seldom see near Boston, but which is apparently common here, *C. Grayii*.

In addition to *Spartina cynosuroides* just mentioned, two other species are to be recorded, with extension of range. *Paspalum psammophilum* was found in a sandy field in Eastham; the Manual gives its range as "so. N. Y. to Del." but it cannot now be called new to New England, as it has recently been found on Nantucket.¹ The present Eastham station is, however, the first on the mainland of New England. The other species is not a native, but comes from Australia or New Zealand, regions that have contributed very little to our introduced flora. *Chenopodium carinatum* R. Br. was found at three stations in Truro and two in Eastham, September 9 and 10. It probably did not come directly from New Zealand, but from California, where it has become established in recent years. It is not likely that many readers of this note will find a description of this species in any work they have at hand, and it may be well to give its principal characters. In general, the species may be said to resemble *C. Botrys* L., being glandular-pubescent and aromatic and having small erect seeds. It is prostrate and freely branched; the leaves are 1-2 (rarely 3) cm. long, oblong-lanceolate and sinuate-pinnatifid; the axillary inflorescences are short or subglobose glomerules instead of loose panicles as in *C. Botrys*; and the tiny sepals are prominently thickened on the back. The genus *Chenopodium* is looked upon rather askance by botanists who are not specially Chenopodiologists (I hope I may be pardoned the word, not knowing whether it is here used for the first time); but the species in question is rather attractive in appearance, and not at all like the rank and weedy *Chenopodiums* that abound in waste, and too often in cultivated places. I think I have seen it the past year near Boston, but my Eastham plant was then still an undetermined species to me, and by the time I had learned its identity it was too late to look for it this season.

All my Cape Cod plants of this year's collecting, including some from Yarmouth and some from Mattapoisett, the latter not strictly belonging to the Cape, but growing under similar conditions, have been deposited in the herbarium of the New England Botanical Club, after being identified by Prof. Fernald, to whom my hearty thanks are due.

MALDEN, MASSACHUSETTS.

¹ Bicknell, Plants of Nantucket, Bull. Torrey Bot. Club, Vol. XXXV, p. 182 (1908).

SOME BOREAL SPECIES AND VARIETIES OF *ANTENNARIA*
AND *ANAPHALIS*.

M. L. FERNALD and K. M. WIEGAND.

THE GENUS *ANTENNARIA* IN NEWFOUNDLAND.

Two species of *Antennaria*, *A. canadensis* Greene and *A. neodioica* Greene, have heretofore been known to extend northeastward to Newfoundland, but during the past summer our explorations brought to light several others upon the western coast: *A. petaloidea* Fernald at one station; a fourth species which for proper identification must await further field study; and the two plants which are described below.

ANTENNARIA eucosma n. sp., argenteo-sericea plus minusve stolonifera; stolonibus gracilibus procumbentibus paullo subterraneis bracteosis, bracteis paucis brunneis; caule florifero 8–25 cm. alto sericeo-tomentoso; foliis utrinque sericeo-tomentosis acutis vel breve acuminatis apice obtuse callosis, basilaris erectis lanceolatis vel oblanceolatis rare ellipticis petiolatis 3-nerviis 5–16 cm. longis 5–15 mm. latis, caulinis 4–7 valde minuantibus, superioribus lineari-attenuatis 7–20 mm. longis; corymbo denso vel glomeruliformi; capitulis foemineis 3–10, involucri 7–10 mm. longo basi lanato, bracteis exterioribus ovatis vel oblongis, interioribus lanceolato-linearibus, omnibus apice scariosis conspicue brunneis vel castaneis, stylis brunneis vel purpurascens; capitulis masculis similibus minoribus, involucri circa 6 mm. longo, pappi setis apici paullo incrassatis usque ad apicem serrulatis.

Silvery sericeous, more or less stoloniferous; stolons (and root-stocks) slender, procumbent, slightly subterranean, with few brown scaly bracts and a tuft of long erect terminal leaves: flowering stem slender, 8–25 cm. high, silky-tomentose: leaves silky-tomentose, acute to short-acuminate, with a blunt callous tip; the basal and those of the stolons upright, lanceolate to oblanceolate, rarely elliptical, tapering gradually to a distinct petiole, 3-nerved, (2–) 5–16 cm. long, 5–15 mm. broad; the 4–7 cauline rapidly diminishing in size; the uppermost linear-attenuate, 7–20 mm. long: corymb dense or glomerulate: pistillate heads 3–10; the involucri 7–10 mm. high, lanate at base, the outer bracts ovate or oblong, the inner lance-linear, all with conspicuous brown or castaneous scarious tips: styles dark-brown or purple: staminate heads similar, smaller; the involucri about 6 mm. high; pappus-bristles slightly thickened upward, serrulate to the tip.—NEWFOUNDLAND: abundant on dry limestone barrens, upper

slopes and tablelands, altitude 200–300 m., Table Mountain, Port au Port Bay, August 16, 1910, *Fernald & Wiegand*, no. 4144 (TYPE in Gray Herb.).

Antennaria eucosma is a remarkable plant, combining characteristics of the *A. plantaginifolia* group of species with those of *A. carpatica* and its allies. It differs at a glance from all the species of the former series by its very elongate upright lanceolate leaves which closely match those of *A. pulcherrima* (Hook.) Greene, a Rocky Mountain species allied to the Old World *A. carpatica* (Wahl.) R. Br. From *A. pulcherrima*, *A. lanata* (Hook.) Greene (also of northwestern America), and *A. carpatica* it is distinguished at once by its slender elongate rootstock and slender horizontal stolons. From *A. pulcherrima*, which it resembles in foliage and pubescence, it is further distinguished by its fewer larger pistillate heads with long dark involucre bracts, its smaller staminate heads with less dilated and more uniformly toothed pappus-bristles; from *A. lanata* by its sericeous pubescence, larger pistillate heads with brown rather than lead-colored bracts; and from *A. carpatica* by its much larger habit, broader uniformly sericeous 3-nerved leaves, larger heads with brown involucre, etc.

An old specimen in the Gray Herbarium collected on Anticosti by Pursh is apparently referable to this species, but the material is inadequate for final determination. This is presumably the plant referred to by Hooker as his *A. carpatica*, *a. humilis* (Hook. Fl. Bor.-Am. i. 329), but Hooker's description and bibliographic citations show his var. *humilis* to be typical *A. carpatica*. The Anticosti plant was likewise referred by Gray (Syn. Fl. i. pt. 2, 232) to true *A. carpatica*.

ANTENNARIA ALPINA (L.) R. Br., var. **cana**, n. var., foliis utrinque sericeo-tomentosis, tomento denso cano.

Like typical *A. alpina* but with the leaves permanently whitened on both sides with a close silvery tomentum.—*A. alpina*, var.—, Hartman, Skand. Fl. ed. 11, 13 (1879).—Apparently rare in Scandinavia, where the true *A. alpina*, with the leaves bright green and glabrous or glabrate above, is the common form of the species; but apparently largely replacing in eastern America the typical green-leaved plant. The following specimens have been examined by us. NORWAY: Dovre, June 28, 1870, *Zetterstedt & Wickbom*; Dovre, without date, ex herb. *Klatt*. GREENLAND: e. Greenland, *Wormskjold*; Disco and Godthaab, July 14, 1892, *W. E. Meehan*, no. 38; Godthaab, Sept. 7, 1894, *H. E. Wetherill*, no. 20; Nugsuak Peninsula, August 12,

1896, *Cornell Party*. LABRADOR: near Hebron, *Mentzel*; Rama, August 20, 1897, *J. D. Sornborger*, no. 156; Port Manvers, August 11, 1900, *E. B. Delabarre*. NEWFOUNDLAND: dry limestone barrens, Pointe Riche, August 4, 1910, *Fernald & Wiegand*, no. 4139 (TYPE in Gray Herb.); dry limestone barrens, altitude 200–300 m., Table Mountain, Port au Port Bay, August 16, 1910, *Fernald & Wiegand*, no. 4141.

Although the character here used to distinguish the var. *cana* is often used as a key-character to separate such species as *A. neodioica* Greene and *A. canadensis* Greene or *A. plantaginifolia* (L.) Richardson and *A. Parlinii* Fernald, it is found in those cases to be only one of several characters which differentiate the species. In *A. alpina*, var. *cana*, however, we have been unable to find any other character by which the plant may be separated from *A. alpina*. It is of course barely possible that var. *cana* may eventually prove to be specifically distinct, but the writers are rather of the opinion that, when better known, *A. alpina* will be found to be a circumpolar species and that many high-northern and alpine plants which have been recently put forward as species will prove to be better treated as geographic varieties or else as subspecies.

ANAPHALIS MARGARITACEA AND ITS VAR. OCCIDENTALIS.

In 1905 *Anaphalis margaritacea*, var. *occidentalis* Greene, with the very large flat leaves bright green and glabrous above, was reported¹ from Gaspé County, Quebec, and from southwestern Newfoundland; and subsequently, prior to the issue of the 7th edition of Gray's Manual, it was found to extend up the St. Lawrence to the north-eastern edge of the Manual range. In the summer of 1909 the present writers found the variety, sometimes in most characteristic development, sometimes passing very clearly to the ordinary form of the species (which has the shorter narrower upper leaves usually whitened above and tending to become revolute at the margins) at various stations on the coast of Washington County, Maine, and in the valleys of the St. John and Aroostook Rivers; and during the past summer, in Newfoundland, further observations have been made with the conclusion that, so far as our experience and herbarium materials show, typical *A. margaritacea*, such as is widely distributed from New Brunswick across New England, is unknown in Newfoundland. In its place are found characteristic var. *occidentalis* or a form with the leaves quite as pubescent above as those of *A. margaritacea*, but

¹ Fernald, RHODORA, vii. 156 (1905).

with the uppermost broad and flat and only slightly reduced in length, thus simulating those of var. *occidentalis*. Similar transitional specimens occur on the continent,—in Quebec, Nova Scotia, New Brunswick, Maine, etc.—indicating that northeastward *A. margaritacea* of our hot dry pastures passes by numerous gradations to the extreme var. *occidentalis* of the cooler and moister region of the Bay of Fundy and the Gulf of St. Lawrence.

When *Anaphalis margaritacea*, var. *occidentalis* was first described¹ it was supposed to be restricted to the Pacific slope: "common among sand hills of the seaboard from at least middle California to Alaska." In 1905² it was considered as belonging to the Pacific slope and to the region of the Gulf of St. Lawrence; but now, after studying the material in the Gray Herbarium in the light of a fuller field-experience, we find that var. *occidentalis*, like the majority of plants which occur both in the Northwest and in the boreal areas of eastern Canada, has intermediate areas in the cooler and moister regions across the continent,—in the Great Gulf of the White Mountains, about the Upper Great Lakes, in the Black Hills, and in the northern Rocky Mts. It is, furthermore, discovered that the common plant of northern Asia is var. *occidentalis* rather than typical *A. margaritacea* as is the plant commonly cultivated and now somewhat naturalized in Europe. Since it is stated that the cultivated plant of Europe (var. *occidentalis*) was introduced from America "about the sixteenth century,"³ it is probable that it was carried thence from Newfoundland or eastern Canada.

The preceding notes may be briefly summarized as follows:

ANAPHALIS MARGARITACEA (L.) B. & H. Leaves very numerous, 38–66 (average 51), linear or linear-lanceolate, white-tomentose above or tardily glabrate; those immediately below the inflorescence 1.5–6.5 (av. 3.6) cm. long, 1–3 (av. 2) mm. wide.—Clearings and dry sterile soil, eastern Quebec to Alaska, south at least to Pennsylvania, northern Ohio, South Dakota, New Mexico, and California;⁴ apparently rare in Asia. Passing in cooler or moister regions to

¹ Greene, Fl. Franciscana, 399 (1897). ² Fernald, l. c.

³ Syme, Engl. Bot. v. 77 (1873).

⁴ The southern distribution as here given is based upon specimens seen. The species has been reported from more southern states,—North Carolina ("Middle and Upper Districts," M. A. Curtis), "mountains of the Southern States!" (Torrey & Gray), West Virginia (Millsbaugh), etc.; but no specimens have been examined by the writers from south of Pennsylvania and they are informed by Professor N. L. Britton that at the New York Botanical Garden there are no more southern specimens. The Ohio record is upon the authority of Professor J. H. Schaffner who has kindly verified the occurrence of the plant near Cleveland.

Var. OCCIDENTALIS Greene. Leaves fewer, 15–48 (av. 36), bright green and glabrous (or if whitened soon glabrate) above, those immediately below the inflorescence 5–12 (av. 7.8) cm. long, 5–20 (av. 10) mm. wide.—Gravelly or sandy soils and along streams, Newfoundland to Alaska, south to Washington County, Maine, Great Gulf, White Mts., New Hampshire, Minnesota, South Dakota, Colorado, and California; also in Asia and introduced in Europe. Ascending in the Shickshock Mts., Gaspé Co., Quebec, along mountain brooks to 625 m. and known in New Hampshire only from banks of a stream in the Great Gulf, altitude 1070 m. (*A. S. Pease*).

REPORTS ON THE FLORA OF THE BOSTON DISTRICT,—VIII.

THIS report on *Cyperaceae* has been based on carefully determined specimens. These are in the Gray Herbarium, and the herbaria of the New England Botanical Club, Wellesley College, the Boston Society of Natural History, the Peabody Museum at Salem, and the private herbaria of Messrs. J. R. Churchill, Walter Deane, C. A. & A. W. Cheever, C. H. Knowlton, A. S. Pease, W. P. Rich, R. A. Ware and E. F. Williams.

There proved to be extant so many specimens over fifty years old, that it has seemed best to limit such citations, as they are matters of merely secondary interest. Henceforth only such aged specimens as are of special note will be quoted.

The reports received, in connection with the Essex, Middlesex and Metropolitan Park Floras, have given adequate data for the common species, but there are still very large areas on the west and south which are little known. We urge all who have herbaria to join us in this work, or to report additions at any time.

CYPERACEAE.

CYPERUS.

C. aristatus Rotth. Sandy strands of fresh-water ponds. Mystic Pond (*Wm. Boott*, Oct. 1, 1876; *C. E. Perkins*, Aug. 2, 1882; *W. P. Rich*, Sept. 29, 1891); Cambridge (*B. D. Greene*, no date); Concord (*H. Little*, no date); Heard's Pond, Wayland (*E. Hunt*, July, 1873;

A. J. Eames & C. H. Knowlton, Sept. 6, 1909; *M. L. Fernald*, Sept. 10, 1909; *K. M. Wiegand*, Sept. 21, 1909; Lake Cochituate, Natick (*K. M. Wiegand*, Oct. 1, 1909. See RHODORA, xii, 39, 1910).

C. dentatus Torr. Wet shores and marshes, abundant throughout.

C. dentatus Torr., var. **ctenostachys** Fernald. Plum Island, Essex Co., with type and intermediates (*J. Robinson*, Aug. 26, 1878); "along the gravelly pond shores below spring level, not rare," Houghton's Pond, Milton (*A. W. Cheever*, Aug. 18, 1905).

C. diandrus Torr. Low ground, in sand, gravel or mud. Not reported from the three southern tiers of towns; abundant in the rest of the district. Collected in Sudbury meadows by Francis Boott in 1819, and at Danvers by B. D. Greene in 1846.

C. Engelmanni Steud. Borders of ponds. Fresh Pond, Cambridge (*Wm. Boott*, Aug. 20, 1853. Since then collected by various others down to 1908); Spy Pond, Arlington (*H. A. Young*, Sept. 21, 1879; *C. E. Perkins*, September, 1881); Little Pond, Belmont (*H. A. Young*, Sept. 21, 1879); Framingham (*T. Morong*, September, 1886; *A. J. Eames & C. H. Knowlton*, Sept. 6, 1909; abundant, Farm Pond, *K. M. Wiegand*, October 9, 1909).

C. erythrorhizos Muhl. Wet sandy and muddy shores. Newburyport (*A. A. Eaton*, Oct. 3, 1896); Lawrence (*J. Robinson*, Sept. 26, 1877. Various other collectors down to 1901); Winter Pond, Winchester (*H. H. Bartlett*, *J. R. Churchill & C. H. Knowlton*, Sept. 15, 1906).

C. esculentus L. Moist soil and cultivated ground. Amesbury, West Newbury, Lawrence, South Boston, Concord, Wayland, Framingham; Danvers (according to Robinson, Fl. Essex Co. 115, 1880); Lowell, Tewksbury and Dracut (according to Dame & Collins, Fl. Middlesex Co. 111, 1888).

C. ferax Richard. Low ground and marshes, near fresh or brackish water. Scattered stations in eastern portion of district; known in the Fenway, Boston, from September, 1878, to the present.

C. filiculmis Vahl. Dry sterile soil; Malden, Woburn, Winchester, Cambridge, Charlestown, Boston, Quincy, Hull, Sharon, Norfolk, Wellesley.

C. filiculmis Vahl., var. **macilentus** Fernald. Very common throughout.

C. fuscus L. "Near Revere beach, 1877 (*Herbert A. Young*)" according to Robinson, Fl. Essex Co. 116, 1880). It was also col-

lected in the same locality, on the edge of a spring in a railway ditch by C. E. Faxon, Sept. 26, 1878 (specimen in Gray Herb.), by H. A. Young, September, 1879 (specimens in Gray Herb. and herb. Essex Co.), and by W. P. Rich, Sept. 21, 1890 (specimen in herb. W. P. Rich). This station is now undoubtedly extinct.

C. Grayii Torr. Sand dunes, Plum Island, Essex Co. (*W. P. Conant*, Sept. 26, 1878, and others since). Never reported at any other station north of Plymouth, which is 55 miles away.

C. Nuttallii Eddy. Along the entire coast, chiefly in brackish marshes. Found also at Winter Pond, Winchester. Collected by John A. Lowell in Roxbury, Sept. 17, 1846.

C. ovularis (Michx.) Torr. "West Boston Flats" (*C. W. Swan*, Sept. 25, 1880. Specimen in herb. N. E. Bot. Club). Introduced, but undoubtedly long since extinct.

C. rivularis Kunth. Moist soil; undoubtedly common, but reported from only nine eastern and northern towns.

C. strigosus L. Wet sunny places, very common throughout.

C. strigosus L., var. **capitatus** Boeckl. West shore of Spot Pond, Stoneham (*W. P. Rich*, Sept. 20, 1894); sandy shore, Winter Pond, Winchester (*H. H. Bartlett*, Aug. 26, 1905; *G. G. Kennedy*, Aug. 10, 1893, and Oct. 20, 1901); West Cambridge (*Wm. Boott*, Nov. 5, 1865); pond border, South Framingham (*T. Morong*, September, 1886).

C. strigosus L., var. **compositus** Britton. Probably introduced in wool and cotton waste near Goulding's Mills, Malden (*F. S. Collins*, Sept. 25, 1887); Green Lodge, Canton (*G. G. Kennedy*, Aug. 8, 1887); Monponsett Pond, Halifax (*Wm. Boott*, Sept. 23, 1870).

C. strigosus L., var. **robustior** Kunth. Moist soil, Winter Pond, Winchester (*C. H. Knowlton*, Sept. 15, 1906).

DULICHIMUM.

D. arundinaceum (L.) Britton. Wet places, usually in standing water. Not reported from extreme western and southern portions; abundant elsewhere, and probably throughout.

C. H. KNOWLTON	} Committee on Local Flora.
J. A. CUSHMAN	
WALTER DEANE	
A. K. HARRISON	

NOTES ON CONNECTICUT PLANTS.

C. H. BISSELL.

AGROSTIS CANINA L. Hillside on border of woods, Sharon (C. A. Weatherby, R. W. Woodward & C. H. Bissell). First found in an autumnal state with decumbent culms and forming clusters of leaves at each joint giving the plant a most peculiar appearance.

SCIRPUS SMITHII Gray. Gravelly shore of Pocotopaug Lake, Chatham (R. W. Woodward & C. H. Bissell).

SCIRPUS SMITHII Gray, var. SETOSUS Fernald. Wet alluvial soil below the dam at Beach Pond, Voluntown (C. H. Bissell). This variety has not before been reported from Connecticut.

HEMICARPHA MICRANTHA (Vahl) Pax. Sandy beaches, Pocotopaug Lake, Chatham, and Congamond Lakes, Suffield (R. W. Woodward & C. H. Bissell). Both these localities are extensions of range for this rare little sedge.

RYNCHOSPORA CAPILLACEA Torr. Open grassy moist border of Beaslick Pond, Salisbury (Mrs. C. S. Phelps).

The margin of Beaslick Pond is of botanical interest because there, within a space not more than a rod square, can be found growing three very rare sedges, *Rynchospora capillacea*, not before reported from Connecticut, *Carex Crawei*, known in the state only from this locality and rare in any case so far south, and *Scleria verticillata* hardly known elsewhere in New England. This last named species was formerly known at another locality in Salisbury but has been destroyed there by flooding from a dam.

CAREX AESTIVALIS M. A. Curtis. Hillside woods and shaded roadsides, scattered over quite an extent of territory, Norfolk (R. W. Woodward & C. H. Bissell). This rare sedge was first found in Connecticut by A. E. Blewitt in June, 1909, in Salisbury; in Sept., 1909, Prof. M. L. Fernald found it in Colebrook, so it is now known from three localities, all in the northwestern part of the state.

CAREX NOVAE-ANGLIAE Schwein. Hillside, in rocky woods, preferring the more open places, Norfolk, near Grant's Station (R. W. Woodward & C. H. Bissell). The plant was plentiful over a section of perhaps an acre in extent; it has not before been reported from the state.

JUNCUS EFFUSUS L., var. *CONGLOMERATUS* Engelm. Open swamp, Voluntown (*C. H. Bissell*). Before this known in New England only from a swamp in Franklin, where it was collected by Mr. R. W. Woodward.

CHENOPODIUM GLAUCUM L. About railroad tracks at Canaan station, North Canaan (*M. L. Fernald*). In 1909 Prof. Fernald found only a few plants but in 1910 they were plentiful and extended for some distance along the tracks.

CLEMATIS VERTICILLARIS DC. Killingly, near the Rhode Island line (*C. H. Knowlton*). The Connecticut Catalogue gives the eastern limit of this species as Bolton, unfortunately overlooking this locality.

TROLLIUS LAXUS Salisb. Woods near Falls Village, Canaan (*Miss M. J. Whitney*). It is a pleasure to be able to record another locality for this plant as until now the Cornwall locality was the only known one in New England.

ROSA CANINA L. Roadsides and border of fields, Portland (*Mrs. F. W. Starmer*), Salisbury (*Mrs. C. S. Phelps*). A rather rare escape.

ROSA NITIDA Willd. Old pasture bordering cedar swamp, Plainfield (*C. H. Bissell*). This species has not before been known south of the town of Thompson.

PRUNUS AMERICANA Marsh., var. *MOLLIS* T. & G. Roadside in rocky ground, East Granby (*H. S. Clark, C. A. Weatherby & C. H. Bissell*). First collected very late in the season and then thought to be *P. nigra*. Later, Mr. Weatherby collected better material and found the plants to be of this variety. This is a plant of the Southwest and must have been introduced at this place where it has spread and there are now many shrubs. Not before recorded from the state.

LESPESEZA HIRTA (L.) Hornem., var. *OBLONGIFOLIA* Britton. Glastonbury (*Mrs. F. W. Starmer*). This variety seems not to have been previously recorded north of New Jersey and its occurrence here is quite an extension of range.

LECHEA MARIITIMA Leggett, var. *INTERIOR* Robinson. Roadsides and open woods in sandy soil, Enfield and Suffield (*R. W. Woodward & C. H. Bissell*). This material is not exactly typical; it has the pubescence and small pod of this variety, but the inflorescence is inclined to be elongated as in *L. intermedia* rather than pyramidal, as it should be in this variety.

HEDEOMA HISPIDA Pursh. Dry sandy hillside, Portland (*C. H. Bissell*). Apparently native at this locality. Known from only one other locality in the state and there seemingly introduced.

PYCNANTHEMUM TORREI Benth. Dry rocky woods, New Haven (*R. W. Woodward & C. H. Bissell*). Not before reported from the state.

VERONICA ANAGALLIS-AQUATICA L. Moist ground along railroad in a little cut near the Canaan railroad station, North Canaan (*C. A. Weatherby*). Mr. Weatherby collected this in the fall of 1909, when the plant was in too poor condition to furnish good material, but determined it as above. In the summer of 1910 Dr. E. L. Greene, not knowing of Mr. Weatherby's collection, discovered the same locality. Dr. Greene informs me that he does not find any European specimens that exactly match his material but there seems to be no other name for our plant at present. There was an old report of this species from East Hartford but this was later proved to be an error. The North Canaan locality is thus the only one in the state for this species.

MITCHELLA REPENS L., forma **leucocarpa**, f. nov., fructu laete albo, ceteris formae typicae simillima.— Collected in Cornwall, Connecticut, during the past summer by Miss M. J. Whitney. In the Bulletin of the Torrey Botanical Club iii. 43 (1872) there appeared (over the initials S. W. A.) a note recording the discovery of a white-berried form of *Mitchella* at Canaan, Connecticut. Miss Whitney to whom I am indebted for specimens states that she has known of a colony for several years which always has white fruit. As it is evident that the form has perpetuated itself or at least has persisted for a considerable time, it seems worthy of a name.¹

SOLIDAGO CANADENSIS L. Alluvial soil along Farmington River, New Hartford, (*C. H. Bissell*). This is the second reported locality for this species in the state, the other being Selden's Cove, Lyme.

ASTER LOWRIEANUS Porter. Rocky woods, Cheshire (*A. E. Blewitt & C. H. Bissell*). Many plants including some of the var. LANCEOLATUS Porter and also intermediate forms.

¹ [Other references to white-fruited *Mitchella repens* are as follows: J. Robinson, Fl. Essex Co., Mass., 60 (1880); Britton, Bull. Torr. Bot. Club, viii. 111 (1881), where the plant is recorded from Moravia, Cayuga Co., New York (*Dr. Charles Atwood*); Gray, Syn. Fl. i. pt. 2, 31 (1884); Dame & Collins, Fl. Middlesex Co., Mass., 45 (1888); and Britton, Bull. Torr. Bot. Club, xvi. 196 (1889), where the form is reported from Stow, Massachusetts (*A. W. Hosmer*). In the Gray Herbarium there are white-fruited specimens from Moravia, New York, *Dr. M. F. Merchant*; Keene, New Hampshire, *Eliza J. C. Gilbert*, and York, Pennsylvania, *Miss Kate Fisher Kurtz*, a collection mentioned by Thomas Meehan (Monthly, iii. 50, 1893) and incorrectly stated to have been the original discovery of the form.— Ed.]

ASTER LONGIFOLIUS Lam. Border of woods in moist sandy soil, Enfield (R. W. Woodward & C. H. Bissell). Known from but few localities in the state.

GNAPHALIUM PURPUREUM L. Rocky pasture near Great Hill Pond, Portland (R. W. Woodward & C. H. Bissell). Previously known only from the southeastern corner of the state.

AMBROSIA PSILOSTACHYA DC. Roadsides in Bridgeport and Stratford (H. S. Clark). Doubtless introduced from the West.

SOUTHINGTON, CONNECTICUT.

NOTES ON CERTAIN LEGUMINOSAE.

C. H. KNOWLTON.

THE recent note by Mr. Walter Deane, in RHODORA for November, 1910, has prompted me to publish the following information in regard to *Desmodium canescens* (L.) DC. and other species of the same family.

Desmodium canescens (L.) DC. I first collected Sept. 4, 1898, in Natick, Mass. The station at that time contained but a few vigorous plants. It is on Woodland Street, between Natick and South Natick, in gravelly soil. The oak woods in the vicinity are full of various other more common species of *Desmodium* and *Lespedeza*. I revisited the station in August, 1907, and again, Aug. 29, 1908, the latter time with Messrs. J. R. Churchill and H. A. Purdie. We found that the plant had spread considerably, occupying both sides of the road for a rod or more. The plant seemed flourishing, but on account of the dry season had produced but little fruit.

Lespedeza capitata Michx., var. *velutina* (Bicknell) Fernald, I have collected but once, in dry sand at Pelham, N. H. It is a very definite variety, and the name is well chosen, for its soft tomentum is entirely different to the touch, from the silky or glabrate forms of the type. The date of this collection was Oct. 11, 1902.

Vicia tetrasperma (L.) Moench. grows abundantly in the edge of oak woods near the salt marsh at East Weymouth, Mass. It had already begun to fruit at the time of its collection, June 6, 1908. I have found it beside the sea at Castine, Me., and on a railroad em-

bankment at Cumberland, Me., where it was first discovered by Mr. E. B. Chamberlain (RHODORA, vi. 195).

Vicia hirsuta L. I found on July 4, 1898, in moist woods on the World's End farm at Hingham, Mass. It is not included in Thomas T. Bouvé's very comprehensive flora of Hingham.

Vicia villosa Roth. Mr. W. P. Rich and I, while collecting in Marshfield, Mass., July 3, 1910, came across what we supposed to be luxuriant specimens of *V. Cracca* L. They grew in a dry field which had evidently not been in recent cultivation. Study of the pressed specimens shows them to be *V. villosa* Roth., easily distinguishable by villous stems, peduncles and leaves, and more vigorous growth. In *V. Cracca* the flowers are 10–12 mm. in length, in this species 13–16 mm. The pods, too, are larger, in my specimen 3.2 cm. long by 1 cm. wide.

Cassia marilandica L. I collected this species Sept. 3, 1902, in Chelmsford, Mass. It grew by the roadside near a brook, and had probably escaped from cultivation, as there is a house near. The place has been mowed in recent years, and I do not know whether the roots still persist or not.

Trifolium dubium Sibth. I first collected this at Hyannis, Mass., June 15, 1909. It is very abundant there. This year I found it very common on Nantucket, and also at Harwich. Mr. F. S. Collins, in RHODORA xi. 131, speaks of this plant as not infrequent in Eastham. This species seems to blossom a month earlier than its nearest relative, *T. procumbens* L. It is very slender, with few-flowered heads 6–8 mm. in diameter. Apparently this is identical with the little shamrock plant of which the city florists raise so many specimens for the early spring trade.

HINGHAM, MASSACHUSETTS.

BARTLETT'S DIOSCOREAE OF THE UNITED STATES.—Bulletin 189 recently issued by the Bureau of Plant Industry, U. S. Department of Agriculture, contains matter of taxonomic interest not usually looked for in the publications of a bureau more especially devoted to the economic phases of botany. It is entitled, "The Source of the Drug Dioscorea, with a consideration of the Dioscoreae found in the United States. By Harley Harris Bartlett, Washington, 1910." The subject is treated under two heads. "Taxonomic history of the Dioscoreae of the United States," and "The Drug Dioscorea."

The latter mainly considers the rhizome of *Dioscorea*, the part used in pharmacy. It is well illustrated by figures that will prove of value also in identifying the plants by the subterranean portions of their stems. The former is a monograph of the *Dioscoreae* of the United States as viewed and elaborated by Mr. Bartlett. It is well known that but one species, *D. villosa* L., is given in all recent books treating the flora of this area. Bartlett makes five, three with names which had been used by previous authors, with two new species and one new variety. From maps that accompany the text showing the distribution of the three with revived names it is seen that they come into the "Manual region." They are (1) *D. paniculata* Michx., the most widely distributed species, from southern New England to eastern Kansas and Oklahoma, but most abundant in the north central States; (2) *D. glauca* Muhl., from Pennsylvania through the two Virginias, Kentucky and southward, but "being essentially a plant of the mountains" it is mainly found along the Appalachian belt; (3) *D. quaternata* (Walt.) Gmel., principally southern, coming into the "Manual region" in western Kentucky and eastern Missouri. *D. paniculata* var. *glabrifolia* Bartlett mostly replaces the typical form in the southwestern part of its range but is represented in Connecticut, Pennsylvania, Maryland and Missouri. The writer has a fruiting specimen of *D. paniculata* from southwestern Michigan that from the description would go with the variety, being perfectly smooth. The two new species, *D. hirticaulis* Bartlett and *D. floridana* Bartlett are southern species of the Atlantic coastal plain.

It will be seen from this that *D. villosa* L. does not appear in this list. The reason given by Mr. Bartlett for dropping it is that provision of the Vienna code which allows a name to be discontinued "when the group which it designates embraces elements altogether incoherent, or which become a permanent source of confusion and error." The only basis for a type, if such it could be called, found in the herbarium of Linnaeus, is a sheet with an American plant; "at the bottom of which," according to Dr. B. Dayton Jackson, Secretary of the Linnaean Society, "is a note by Linné himself, '6 K sativa,' to which Smith has added in pencil, 'non est.'" No specimen named "*villosa*" by Linnaeus was found by Dr. Jackson in the herbarium. *D. sativa* L. is an East Indian plant, and since the sheet is marked as collected by Kalm ("K = Kalm") but named *sativa*, there is evidently a mistake or a confusing of Asiatic and American species, since Kalm collected in America. A. De Candolle found a similar confusing of species of *Dioscorea* by Linnaeus when he considered the origin of cultivated plants in his "Géographie Botanique," and more fully treated in a later work "L'Origine des plantes cultivées."¹ Under the name *D. sativa* Linnaeus had confounded several Asiatic and American species. Grisebach, in his "Flora of the

¹ l. c. p. 62.

British West Indies," mentions five species or forms that he deems thus comprised under *D. sativa*.¹ But De Candolle found a way out of the muddle without abandoning the name, leaving *D. sativa* L. for a plant cultivated in Ceylon "with which Linnaeus was acquainted." Such an opening did not seem available to Mr. Bartlett.

Matters were equally confusing and unsatisfactory as a basis for a "book species." For details and for the adoption of the names of three of the species that had previously been used, the reader is referred to the work itself. Taken altogether the author seems well justified in abandoning the name *D. villosa* L. We may regret the loss of a name of long standing, as we do in a similar case of Sargent's dropping for the same reason *Crataegus coccinea* L. But with *D. villosa* there is some compensation on the sentimental side for leaving a specific term that literally could not apply to the plant, or as Gray has expressed it in the earlier editions of his Manuals, "A bad name, for the plant is never villous, but often nearly smooth."

It is also apparent from all this that the "Linnaean concept of species," much emphasized by some, especially if not systematists, comes at times to be a very hard thing to apply in practice. However good in itself as a "concept," when it becomes so intangible that it cannot be run down and captured, it seems the part of wisdom to give up the chase.—E. J. HILL, Chicago, Illinois.

¹ l. c. p. 588.

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